

Turgor in yeast.—PANTANELLI having examined the regulation of turgor in certain fungi and distinguished "cell pressure" into two factors, (1) osmotic pressure or turgor, due to solutes, and (2) tension, due to imbibition, has investigated by the same methods the turgor regulation in yeast derived from Roman bread.¹² He finds that during fermentation turgor at first increases, then remains constant, and finally diminishes when the nutritive value of the medium becomes much lowered. The power of osmotic regulation depends primarily upon nutrition. If the foods are temporarily removed without altering the concentration of the medium, the turgor and the tension diminish rapidly, the plant being compelled to use its own reserves, forming vacuoles. If grown in water or allowed to dry slightly, turgor diminishes, but the tension increases, in the first condition until death, in the second up to a maximum, after which it diminishes greatly before death. With age the power of osmotic regulation is gradually lost. Aeration facilitates it so much that it seems admissible to say that the Roman yeast lives during and after fermentation only because it falls into a state of narcosis more or less profound.—C. R. B.

Blast of rice.—METCALF¹³ has recently published an account of the "blast" of rice with short notes on other rice diseases. This blast is characterized by lesions at one or more of the nodes of the stem above which the stem dies. It has often been confused with other diseases or injuries and the true extent of its damage not realized. The disease is promoted by resting the land or by applying nitrogenous fertilizers. It can be produced in healthy plants by inoculations directly from diseased plants, but the organism causing the disease has not yet been fully determined. The use of lime and marl with potash and phosphorus is recommended as fertilizer treatment that tends to reduce the tendency to blast. The disease is prevented by spraying with Bordeaux mixture, but this treatment is not practicable with this crop. The search for immune plants has been of no avail up to this time.—E. MEAD WILCOX.

A new chestnut disease.—MURRILL¹⁴ has described a new and serious disease of the native chestnut, which is epidemic in many parts of New York City and threatens to destroy all the chestnut trees of that region. The disease is also known to occur in New Jersey, Maryland, District of Columbia, and Virginia. "The fungus attacks twigs, branches, and trunks, irrespective of size or position, and usually proceeds in a circle about the affected portion until it is completely girdled." It is described as a new species of *Diaporthe* (*D. parasitica*).—J. M. C.

¹² PANTANELLI, E., Recherche sul turgore delle cellule di lievito. *Annali di Botanica* 4:1-47. 1906.

¹³ METCALF, H., A preliminary report on the blast of rice, with notes on other rice diseases. *Bull. N. Car. Exp. Sta.* 121:1-43. 1906.

¹⁴ MURRILL, W. A., A new chestnut disease. *Torreyia* 6:186-189. 1906.